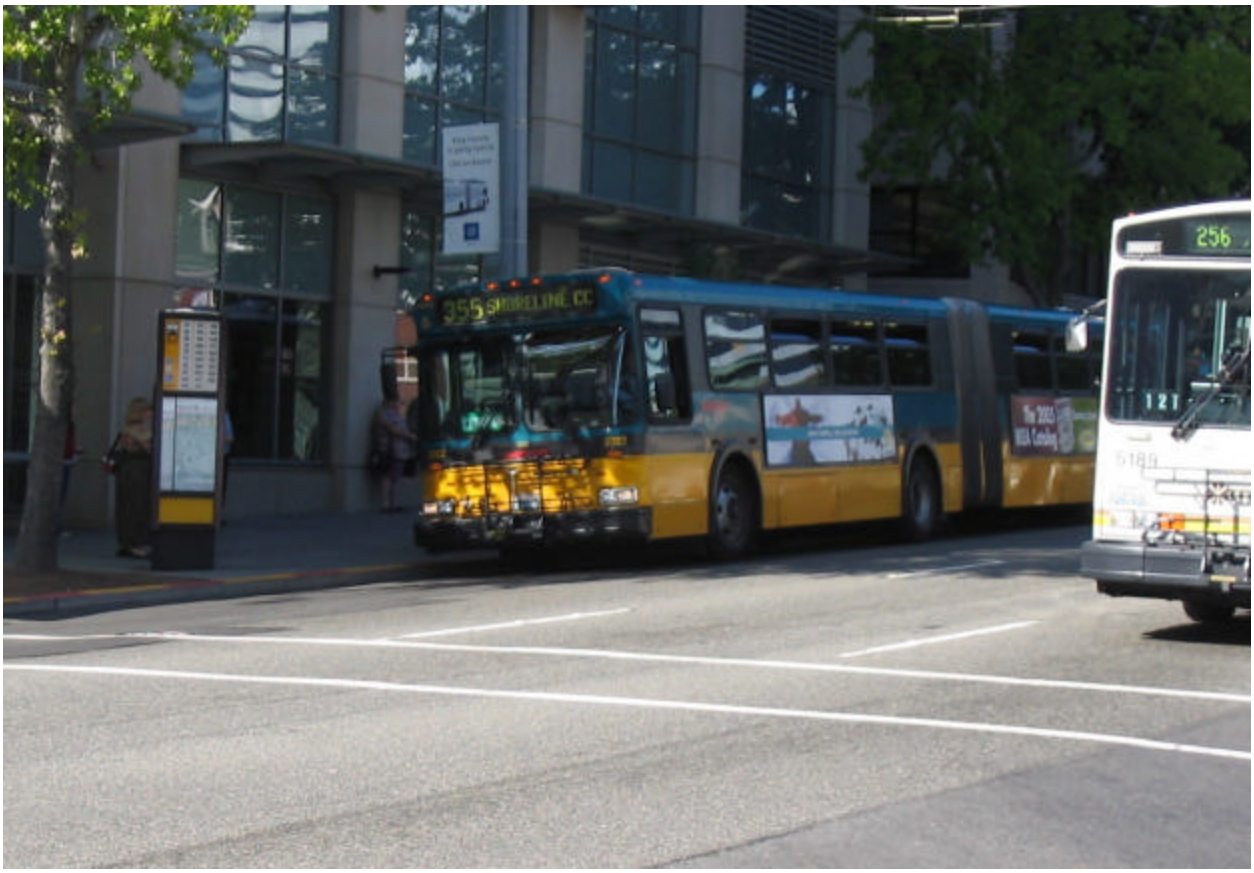
Performance Report on Surface Streets in the Seattle Central Business District

Volume 4: Third Update - Post Tunnel Closure

August 10, 2006



As required by the Agreement between King County, City of Seattle and Sound Transit, as revised June 24, 2002, for the Downtown Seattle Transit Tunnel and Related Facilities.

Prepared by the Monitor and Maintain Committee, with representation from the following agencies:

City of Seattle
King County
SoundTransit
communitytransit
Pierce Transit

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Report Purpose

This report, and subsequent updates, are intended to provide the documentation necessary to satisfy the requirements of Section 10.3 of the "Agreement Regarding the Design, Construction and Operation of the Downtown Seattle Transit Tunnel and Related Facilities", as executed by the City of Seattle, King County and Sound Transit.

Excerpts from Section 10.3 of this Agreement read as follows:

> "It is the Parties' intent that the Downtown Seattle Traffic and Street Improvements will be sufficient to maintain bus service performance on surface streets in downtown Seattle, during the closure period and after the tunnel is re-opened at performance levels similar to those existing prior to the Closure Period. The Parties hereby establish a Monitor and Maintain Committee (M&M Committee) to be comprised of the designated contacts set forth in Section 20.0. The M&M Committee may be expanded to include participation by other public agencies at the discretion of the Parties. The M&M Committee shall conduct baseline studies of bus travel time and passenger convenience, security, safety and comfort during a measurement period prior to the Closure Period (Baseline Measurement Period.)"
>
> "During the Closure Period and for one year after the Tunnel is reopened, the M&M Committee shall continue to monitor downtown Seattle transportation system performance and make recommendations to the Parties to take actions to maintain said system performance. In performing its functions, the Committee shall be directed to (a) consult with and seek input from suburban stakeholders and (b) report quarterly to the City Council's Transportation Committee regarding the performance of the downtown transportation system and regarding the Committee's consultation with various stakeholders."

The M&M Committee issued its first performance report in September, 2005 just prior to tunnel closure. Volume 1 of the report documented pre-tunnel closure conditions for six specific performance measures. Data for this initial baseline report was collected during the spring and summer of 2005. The six performance measures that are being tracked are as follows:

- Transit travel time
- General purpose traffic operations
- Transit ridership and bus volumes
- Pedestrian activity at bus zones
- Seattle Central Business District (CBD) Customer Surveys
- Transportation Demand Management (TDM) mitigation programs

Each of these six performance studies has been funded as a project within the overall Tunnel Agreement.

Volume 2 of the report was issued January, 2006. It provided the initial assessment of how the tunnel closure plan performed overall, and provided a detailed summary of the contingency planning effort that took place in the first 90 days following tunnel closure. The data sets used for Volume 2 were collected in the fall of 2005, following tunnel closure and extended up to the beginning of the Thanksgiving holidays. This allowed for a better comparison of before and after tunnel closure conditions in the Seattle central business district for non-holiday times.

Volume 3 of this report – issued March 2006 - provided updates on a subset of the six performance measures. Specifically, Volume 3 provided updated information on Measures 1, 3 and 4 and summarized the effect of a set of measures implemented after the release of Volume 2 to address issues identified after tunnel closure. These measures are: transit travel time; transit ridership and bus volumes; and pedestrian activity at bus zones. For Volume 3, transit travel time and bus volumes were derived from the first two weeks in February following the spring 2006 service change. Transit ridership figures are

derived from the fall 2005 service change that ended on February 11, 2006. Pedestrian activity at bus stops is derived from a survey taken in late February/early March.

This Volume 4 report provides updated information on five of the six performance measures.

The projected schedule for the release of the balance of the report updates has been updated, as shown in Figure 1. There will now be a total of seven, rather than eight reports issued as part of this monitoring program. It has been determined that an eight report scheduled for release in March 2008 will not be needed. With the release of Volume 4, there are now only three reports yet to be released.

Figure 1. Performance Report Release Dates

	Performance Report Release Dates						
Performance Measure Updates	Complete	Complete	Complete	Complete	Dec 06	June 07	Dec 07
	Sept 05	Jan 06	March 06r	Aug 06			
	Volume 1	Volume 2	Volume 3	Volume 4			
Transit Travel Time	⊙	⊙	⊙	⊙	⊙	⊙	⊙
General Purpose Traffic Operations	⊙	⊙		⊙		⊙	⊙
Transit Ridership and Bus Volumes	⊙	⊙	⊙	⊙	⊙	⊙	⊙
Pedestrian Activity at Bus Zones	⊙	⊙	⊙				⊙
Surveys of CBD customers	⊙			⊙	⊙		⊙
TDM mitigation programs	⊙	⊙		⊙	⊙	⊙	⊙

It is the intent of the M&M Committee to use these reports as a means of communicating on a regular basis the actions taken by the M&M Committee to address any deficiencies in the performance of the CBD transportation system during tunnel closure. In December 2006 the M&M Committee will issue Volume 5, the fifth installment of this report.

Executive Summary on Post Tunnel Closure Conditions through July 2006

Volume 4 of this Report summarizes the post tunnel closure experience in the Seattle Central Business District through July 2007.

The balance of this report provides more detail on each of the evaluation programs that compose the third reporting period post tunnel closure. Key highlights from each monitoring program are as follows:

Transit Travel Time & Reliability

The first level of analysis for downtown transit travel time is a composite measurement of average time spent in the study area. This value is obtained by identifying the first and last observation of a bus trip in the CBD, regardless of the corridor. Averaging this figure for all trips results in a single value of time spent in the CBD for all observed trips. This value is used as an index, not a measure. This figure includes layover time as well as through-routed trips under one measurement. It will also include many different paths through the CBD with different lengths and travel conditions. The measure becomes meaningful when compared to the same measurement to the same measure for future conditions to compare the ease of travel for transit through the CBD.

The data used for this reporting period covers the first seven weeks of the June 2006 service change. The Travel Time index for this reporting period is **77**, based on an average travel time of 16:55, and is relatively unchanged from the February 2006 index of 78. The baseline Travel Time Index is **100**, representing the value before tunnel closure. The average travel time value at that time was determined to be 21:59, based on bus trips between 4 - 6 pm on weekdays during the month of July, 2005. The current index represents a **23%** decrease in time spent in the downtown core over the baseline. The consistency between the February 2006 measurements reported in Volume 3 and this analysis period confirm that CBD transit travel times have been largely consistent and the contingency measures implemented following tunnel closure to deal with specific problem areas, such as Stewart, continue to be effective.

At the corridor level, travel time comparisons were made using baseline data collected before tunnel closure and the three set of post tunnel data available through Volumes 2, Volume 3 and now Volume 4. The most recent data sample was taken for the first seven week of the June 2006 service change. The results are summarized below:

- Travel time on First Avenue has degraded from the previous report. This increase is probably attributable to the impact of baseball traffic on Pioneer Square during this data collection period.
- The average travel time on Second Avenue improved by about one minute in the morning peak and by about two minutes in the evening peak, from the previous report with no effective change in variation.
- For Third Avenue, average travel times improved by about one minute in the northbound direction and slowed in the southbound direction by about one minute compared to the previous report. Trip variation was comparable for both directions. Travel continues to be better in both directions than before tunnel closure.
- For Fourth Avenue S, southbound between Third Avenue S and S Washington Street to Fourth Avenue S and Royal Brougham, average travel times decreased by one minute during the morning peak, with effectively no change in variation for either the morning or evening peak.
- Travel on Virginia, Stewart, and Howell Streets generally increased over the results reported in Volume 3, suggesting that these corridors all experienced several high congestion incidents during the measurement period. However, Virginia and Stewart still operate better than before tunnel closure. Morning peak on Howell remains slower than before tunnel closure while evening peak is comparable to before tunnel closure.

General Purpose Traffic Operations

Overall, travel times for general purpose traffic did not change significantly for the morning rush hour or for the midday period. Most of the changes were +/- 1 minute of the pre-tunnel closure times. However, travel in the evening rush hour is slower on several key corridors. Stewart Street and Fifth Avenue have been impacted the most, where trip times have increased by 2:31 and 1:45 minutes, respectively. In the most recent data (May 2006), the travel times for these segments have begun to normalize and are less than a minute slower than pre-tunnel closure conditions. In the most recent data suggests that southbound First Avenue and eastbound Cherry Street have increased travel times, with 1:53 and 1:41 minutes longer during the PM peak period than what was measured during the pre-tunnel closure conditions.

As expected, traffic volumes continue to be significantly reduced on Third Avenue and increased on other streets in the central business district due to the traffic restrictions on Third Avenue. The greatest traffic increases occurred on southbound Second Avenue south of Pine Street and on northbound Sixth Avenue south of Olive Street.

It is acknowledged that the downtown transportation system is now more fragile and more subject to periodic disruption due to various types of incidents, such as accidents, inclement weather, on-street parking violations, vehicle breakdowns and special events. There is very little reserve capacity left to deal with these situations. As a result, it takes less to trigger a traffic problem and longer for the system to recover from it.

Transit Ridership and Bus Volumes

Approximately 95,000 north-south riders crossed the downtown screenline at University Street on weekdays in fall 2004 prior to tunnel closure. As part of a general increase in ridership, this number increased to almost 106,700 weekday riders in spring 2005. For spring 2006, downtown loads crossing University Street decreased slightly from the spring 2005 level, to 103,000.

The bus volumes on surface streets in the Seattle Central Business District have not changed significantly from those reported in Volume 3. They continued to reflect the routing adjustments made post tunnel closure to address operation problems on Stewart Street.

Customer Surveys

A small intercept survey of approximately 200-300 downtown users was conducted in the fall of 2005 immediately following tunnel closure. A second intercept survey was conducted in the spring 2006. The results of these intercept survey can not be compared with the results of the much larger baseline and statistically significant survey conducted prior to tunnel closure. But the smaller intercept surveys do provide inferences that are comparable to what can be derived from focus groups.

Results from the spring 2006 quick feedback survey were generally consistent with results from fall 2005. The majority of respondents who participated in the 2006 survey felt it was not more difficult to get to downtown, that their buses were on time and that the convenience of their bus stop locations has not changed. However, a sizable minority of respondents still feel these travel elements had gotten worse since the tunnel closed. Respondents were evenly divided on whether it now takes more time to get through downtown and whether downtown is more crowded than before the tunnel closure.

Transportation Demand Management Program

The package of Transportation Demand Management (TDM) programs introduced in support of tunnel closure has successfully expanded participation in commute options. As of this report, results through May, 2006 are as follows:

- Over 500 Puget Pass holders have signed up for the Home Free Guarantee (HFG) for Individuals program.

- Registration activity at Rideshare Online has increased with more than 930 registrations by downtown employees since the Downtown Seattle Transit Tunnel closure.
- The number of merchants participating in the second edition of the Shop, Dine & Ride book increased to 120.
- 54 bike riders have completed the full three-hour bicycle commute skills workshop offered by the Cascade Bicycle Club in the second reporting period.